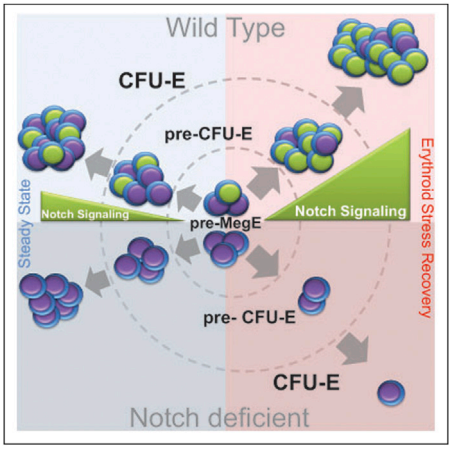
Cell Stem Cell

In This Issue



Review: Genetic and Epigenetic Variations in iPSCs

LIANG AND ZHANG, 149

This Perspective reviews the current understanding of genetic and epigenetic variations in iPSCs, traces their causes, discusses their implications for iPSC applications, and proposes approaches to cope with these variations.

Many Notches along the Hematopoietic Path

OH ET AL., 190

A comprehensive analysis establishes multiple roles for Notch signaling at different stages of the hematopoietic differentiation pathway. (Top image.)

Tet1 in Neurogenesis

ZHANG ET AL., 237

Regulation of neural progenitor proliferation underlies defects in adult hippocampal neurogenesis in Tet1 null mice. Preview by Mukherjee and Hsieh.

Thymus Development in a Dish

PARENT ET AL., 219 AND SUN ET AL., 230

Human embryonic stem cells are differentiated into thymic epithelial progenitors, which upon transplantation mature into a thymic epithelium that supports T cell development and the generation of functional T cells. Preview by Boyd et al. (Bottom image.)

Human HSC Hierarchy

ANJOS-AFONSO ET AL., 161

Cellular and molecular analysis of human $CD34^-$ HSCs puts them at the top of the pile in the hematopoietic hierarchy, above the previously characterized $CD34^+$ populations.

Making iPSCs the Easy Way

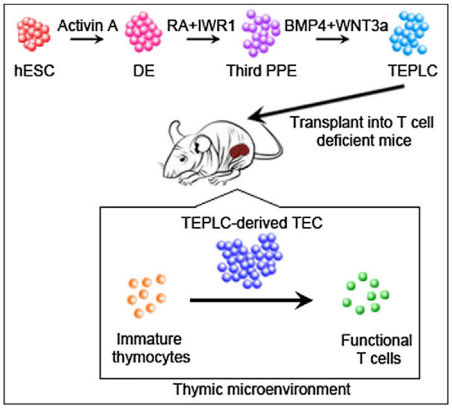
YOSHIOKA ET AL., 246

An efficient way to make human iPSCs using a single transfection of a synthetic, self-replicating polycistronic RNA expressing a four-factor reprogramming cocktail is presented.

Direct Reprogramming to Hematopoietic Cells

PEREIRA ET AL., 205

A cocktail of four transcription factors, Gata2, cFos, Gfi1b, and Etv6, can induce a hemogenic program in mouse fibroblasts, leading to the formation of an endothelium that gives rise to hematopoietic cells. Preview by Pfaff and Cantz.



For HSCs, Location Counts

GUEZGUEZ ET AL., 175

HSCs that localize preferentially to the trabecular bone region have superior regenerative capacity, suggesting that bone marrow regional localization affects HSC function.